

dichromate strikes a blackish green or red colour when brought in contact with aniline. You will see the *modus operandi* when I say that paper is floated with potassium dichromate and a trace of phosphoric acid. Aniline is dissolved in spirits of wine, and the mixed vapours allowed to come in contact with the sensitive paper that has been exposed beneath a positive print, such as a map or plan. The impact of the light has so changed the potassium salt, that the aniline vapour causes but little coloration, whilst where the paper has been protected from it, the dark colour indicates that the dichromate is unchanged. The formation of this black colour is familiar to the manufacturers of aniline colours, being, I believe, similar in composition to the residue left after the formation of aniline purple by Mr. Perkins's method.

It should be noted that for copying engineers' tracings and drawings this process is extremely valuable, as there is no occasion to take a negative on glass before obtaining a print. All that is requisite is that the original should be fairly penetrable by light. A piece of paper prepared as indicated, a sheet of glass to place over the plan, and a box in which to place the exposed print to the aniline vapour are the only necessary plant for the reproduction of a design.

(To be continued.)

NOTES

THE following are the officers of the forty-sixth annual meeting of the British Association which will commence at Glasgow on Wednesday, September 6, 1876:—President-designate—Prof. Thomas Andrews, M.D., LL.D., F.R.S., Hon. F.R.S.E., in the place of Sir Robert Christison, Bart., M.D., D.C.L., F.R.S.E., who has resigned the Presidency in consequence of ill health. Vice-Presidents elect—His Grace the Duke of Argyll, K.T., F.R.S., &c., the Lord Provost of Glasgow, Sir William Stirling Maxwell, Bart., M.A., M.P., Prof. Sir William Thomson, D.C.L., F.R.S., &c., Prof. Allen Thomson, M.D., LL.D., F.R.S., &c., Prof. A. C. Ramsay, LL.D., F.R.S., &c. General Secretaries—Capt. Douglas Galton, C.B., D.C.L., F.R.S., &c., Dr. Michael Foster, F.R.S. Assistant General Secretary—George Griffith, M.A., F.C.S. General Treasurer—Prof. A. W. Williamson, Ph.D., F.R.S. Local Secretaries—Dr. W. G. Blackie, F.R.G.S., James Grahame, J. D. Marwick. Local Treasurers—Dr. Fergus, A. S. McClelland. The Sections are the following:—Section A: Mathematical and Physical Science. President—Prof. Sir W. Thomson, D.C.L., F.R.S. Section B: Chemical Science. President—W. H. Perkin, F.R.S. Section C: Geology. President—Prof. J. Young, M.D. Section D: Biology. President—A. Russell Wallace, F.L.S. Department of Anthropology, A. Russell Wallace, F.L.S. (President), will preside. Department of Zoology and Botany, Prof. A. Newton, F.R.S. (Vice-President), will preside. Department of Anatomy and Physiology, Dr. J. G. McKendrick (Vice-President), will preside. Section E: Geography. President—Capt. Evans, C.B., F.R.S., Hydrographer to the Admiralty. Section F: Economic Science and Statistics. President—Sir George Campbell, K.C.S.I., M.P., D.C.L. Section G: Mechanical Science. President—C. W. Merrifield, F.R.S. The First General Meeting will be held on Wednesday, Sept. 6, at 8 p.m. precisely, when Sir John Hawkshaw, C.E., F.R.S., will resign the chair, and Prof. Andrews, F.R.S., President Designate, will assume the Presidency, and deliver an Address. On Thursday evening, Sept. 7, at 8 p.m., there will be a *soirée*; on Friday evening, Sept. 8, at 8.30 p.m., a Discourse; on Monday evening, Sept. 11, at 8.30 p.m., a Discourse by Prof. Sir C. Wyville Thomson, F.R.S.; on Tuesday evening, Sept. 12, at 8 p.m., a *soirée*; on Wednesday, Sept. 13, the Concluding General Meeting will be held at 2.30 p.m. The Local Committee, as our readers will have seen from a previous report, have made unusual exertions to render the Glasgow meeting a success. A variety of interesting collections will be exhibited,

and the excursions which have been already arranged for will doubtless form one of the most attractive, and not the least instructive, feature of the meeting.

It is with sincere regret that we notice the announcement in *L'Explorateur* of the death of the eminent and well-known geographer, Dr. August Heinrich Petermann, at the early age of fifty-four years. He was born April 18, 1822, at Bleicherode, in Prussian Saxony. In 1839 he became a pupil of the special Academy founded at Potsdam by the geographer Berghaus, whose secretary and librarian he was for six years, as well as *collaborateur*, for he took an active part in the preparation of the great Physical Atlas of his master; the English edition, which appeared at Edinburgh in 1847, even bore his name. In 1845 he left Germany for Edinburgh, after two years' stay in which city he went to London, where he became a Fellow of the Royal Geographical Society. He wrote many valuable articles on the Progress of Geography, in the *Athenæum* and the "Encyclopædia Britannica," published the "Atlas of Physical Geography" in conjunction with the Rev. Thomas Milner, and a *Tableau* of Central Africa according to the most recent explorations. It was greatly due to his influence that the English Government entrusted to the German travellers Barth, Overweg, and Vogel, missions fruitful in results both to science and commerce. Petermann also, as our readers know, paid great attention to questions connected with the Arctic regions, though his opinions on certain points connected with Arctic geography are not likely to be confirmed. Still he did excellent service in this department by advocating the equipment of expeditions private and governmental, and by recording speedily and accurately the results from time to time obtained. In 1854, Petermann accepted the chair of geography in the University of Gotha, and in 1855 received from the University of Göttingen the degree of Ph.D. It was at this time that he undertook the direction of the great geographical establishment of Justus Perthes, of Gotha, and commenced to edit the well-known *Mittheilungen*, the monthly geographical review, whose scientific value has been long recognised. Petermann had a comprehensive idea of what is included under geographical science, and it will be difficult to supply his place either as editor of the *Mittheilungen*, or in the department of scientific geography.

MR. CROSS on Monday received a very numerous deputation from the British Medical Association, who laid before him their views with regard to the Vivisection Bill now before Parliament. These opinions were conveyed by Mr. Ernest Hart, Mr. John Simon, Dr. Wilks, senior physician of Guy's Hospital, and Sir W. Jenner, who raised his voice against a measure which would place men of science under police supervision, and would lay a ban upon them for inflicting cruelties on the lower animals when ten thousand times greater cruelties were inflicted by those who were going to pass this Bill. Such conduct would make those who passed it objects of scorn to all the scientific men in Europe. The Home Secretary, in reply, pointed out that the Bill was framed practically in accordance with the views of the Royal Commission, and that whether the Bill passed now depended entirely upon the line of conduct pursued by the medical profession.

WE are compelled by a pressure on our space to postpone the continuation of Dr. Richardson's articles till next week.

THE Kew museums have recently acquired some interesting additions to their already unique and valuable collections by the presentation, by his Royal Highness the Prince of Wales, of the botanical specimens collected during his recent visit to India. These specimens consist of a number of seeds and fruits of economic or medicinal value, as well as of condiments, drugs, gums, &c., from Southern India, and a series of named woods from Kanara. Though most of the seeds, fruits, and gums are already contained

in the Kew collection, so rich is it in Indian and Colonial products, some are nevertheless absolutely new, and many of them are fresher than those which have been contained in the Museum for some years.

M. RAFFRAY, we learn from *L'Explorateur*, 'entrusted with a scientific mission by the French Minister of Public Instruction, proposes to explore the Sunda Islands and New Guinea, especially in relation to their natural history. He takes with him as assistant, M. Maurice Maindrow, of the Entomological Laboratory of the Paris Museum. The explorers will embark at Toulon on the 20th inst. for Singapore, in a government vessel. From Singapore, M. Raffray will proceed by Batavia to Ternate and the island of Waigiu, where the two explorers intend to sojourn till the spring of next year. Proceeding then to Dorey, they will endeavour to land on the coast of the Aropin country, on the south of Geelvincks Bay, a region which has not been visited by the Italian explorers, Beccari and D'Albertis. M. Raffray expects his expedition to last for two or three years, according to the state of his health.

SIGNOR D'ALBERTIS and party have left Somerset on their way to New Guinea; they have a steam launch with them.

MR. ERNEST GILES, the Australian explorer, was last heard of at Mount Murchison on April 10, when all was well. Mr. Giles expected to reach Beltana, South Australia, about September.

IN reference to our article on the Tasmanians last week, we learn that that people are not quite extinct, though nearly so. It appears by a letter from M. Castelnau, French Consul at Sydney, to the Geographical Society of Paris, read at its last sitting, that the only four Tasmanians living were presented at the last levée held by the Governor of Tasmania. The *Times* of last Thursday intimated the death of another last Tasmanian; but evidently we have not yet seen the end of them.

WE are glad to see that the subscription for the proposed memorial to the late Mr. Daniel Hanbury is progressing; there is already a considerable list of subscribers, but there is room for many more. The memorial, as we have already intimated, is to be a gold medal, to be awarded for high excellence in the prosecution or promotion of original research in the natural history and chemistry of drugs. Subscriptions should be sent to the hon. secretaries to the fund, 17, Bloomsbury Square, W.C.

A MEETING has been held to promote a memorial to the late Dr. Parkes, F.R.S. It is hoped that a sufficient sum of money may be collected to establish a museum and laboratory of hygiene similar to those now existing at Netley.

THE Council of the Royal School of Mines have awarded the Royal Scholarships for first-year students to T. E. Holgate and F. G. Mills; the Royal Scholarship for second-year students to A. N. Pearson; the De la Beche Medal and Prize for Mining to H. Louis; the Murchison Medal and Prize for Geology, and the Edward Forbes Medal and Prize for Natural History and Palaeontology, to W. Hewitt. The following have obtained the Associateship of the school during the past session (1875-76):—W. Hewitt, C. V. Boys, J. de Goncer, F. E. Lott, H. Louis, E. F. Pittman, E. B. Pressland, J. H. Barry, A. J. Campbell, P. de Ferrari, M. H. Gray, H. Gunn, W. Howard, A. B. Kitchener, W. F. Ward.

CAPT. MOUCHEZ sent to Amsterdam and St. Paul Island, some time since, a trading-vessel, in order to collect specimens of natural history to complete the collections made during the Transit of Venus expedition. The ship was wrecked on Amsterdam Island, and the crew were drowned, the captain only being saved. He remained for two months on the island, and was rescued by a Norwegian whaler. But during his forced stay in that solitude, Capt. Herman did not lose sight of the objects of his mission,

and devoted to it all the time he was not obliged to devote to obtain food and shelter. All the objects collected under such peculiar circumstances have been sent to France by the Messageries Nationales, and are expected to arrive by their next steamer.

MR. FLOYD (not Lloyd), the President of the Board of Trustees for the Lick Donation, has come to an arrangement with M. Leverrier for the better execution of the contemplated instruments for the Paris and San Francisco Observatories. The masses of glass required are to be made in Paris, at Feil's glass-works, and the object-glasses very likely by an English optician. The French refractor is to have a double set of object-glasses, the necessary money having been given to M. Leverrier by M. Bishofsheim, one of the richest Parisian bankers, the donor of the Bishofshelm transit instrument now constructing at the Paris Observatory.

THE following are the numbers of visitors to the Loan Collection of Scientific Apparatus during the week ending July 8:—Monday, 3,211; Tuesday, 2,544; Wednesday, 607; Thursday, 609; Friday, 614; Saturday, 4,354; total, 11,939.

DURING the present week twelve demonstrations of apparatus were given at the Loan Collection on Monday, eleven on Tuesday, six on Wednesday, seven to-day; five will be given to-morrow, and seven on Saturday.

AN examination will begin on Tuesday, October 10, at Merton College, Oxford, for the purpose of electing to one Physical Science Postmastership, of the annual value of 80*l.*, tenable for five years from election. The subjects of examination will be Chemistry and Physics. There will be a practical examination in Chemistry. Further information may be obtained from the tutor in Physical Science.

MR. THOMAS STEVENSON writes with reference to Mr. Kinahan's letter on sand-drift in *NATURE*, vol. xiv., p. 191, that from a passage in his book on "The Design and Construction of Harbours," second edition, p. 243, it will be learned that the pine planted by Lord Palmerston was the *Pinus maritima major*. In his report to Lord Palmerston in 1839, Mr. R. Stevenson recommended that this pine should be procured from France. A kind of bent grass was planted on the side next the sea, so as to act as a protection to the pines during their first growth. The result of the experiment was highly successful.

A REPORT has gone the round of the papers that the Government have recently made an offer to the Council of the Zoological Society of a strip of ground on the north bank of the Regent's Canal, on condition that the Gardens should be opened free to the public on one day in each week, and that this offer has been declined. This report is quite unfounded, the strip of land referred to having been granted to the Society in 1869. Upon it is built an aviary and the lodge in connection with the Primrose Hill gate. That a still further extension of the Gardens would be to the public gain, all visitors will no doubt testify.

HERR CARL HAGENBECK, the well-known dealer in living animals at Hamburg, has just received a large collection from Upper Nubia, amongst which are four elephants, five giraffes, and several other large mammalia. They are under the care of four Hamran Arabs, whose sword-hunting feats have been so well described by Sir Samuel Baker in his work on the Nile and its tributaries. Dressed in their native costumes and mounted on four fleet dromedaries, these Arabs cause quite a sensation among the inhabitants of Hamburg, and are of themselves, independent of the animals, well worthy of a visit from all passing in that direction.

THE living gorilla, which we referred to a fortnight ago as being at Liverpool, after travelling from Hull to Hamburg, was forwarded to Berlin, in the Aquarium of which city we believe it is to be deposited.

MR. W. S. WARD, of the United States Executive, is now on a visit to England to make himself acquainted with the principles and construction of the most important public aquaria in this country with reference to the establishment of similar institutions on an extensive scale in New York, and other leading American cities.

PROF. H. G. SEELEY has been appointed to the Professorship of Geography in King's College, London.

THE Dutch Society of Sciences, Haarlem, has awarded the Boerhaave Medal to Prof. W. Hofmeister, Professor of Botany in the University of Lübingen.

WE are doing a good deal, says the *Gardeners' Chronicle*, to bring scientific literature within the reach of the people, but our French neighbours are certainly ahead of us in this respect. This conviction is forced upon us by the recent purchase of a Manual of Botany of sixty-two pages for the sum of 10 centimes—a penny in English money! This closely printed little work, by one M. Anciaux, forms one of a series of similar brochures which is issued by M. Ad. Rion under the title of "Les Bons Livres." It contains chapters on vegetable anatomy and physiology, on botanical geography, classification, and taxonomy, and is certainly a marvel of cheapness.

M. CEZANNE, the young and promising member of the French Chamber of Deputies for Hautes-Alpes has died of consumption. M. Cezanne, the author of a valuable work on the physical phenomena presented by waterfalls on mountains, was the founder and president of the French Alpine Club. His loss will be so much more heavily felt that the French Minister of Public Instruction is at present making great efforts to popularise the new institution. An official circular, published almost on the very day when M. Cezanne died, recommends the heads of the several government schools in France to organise tourists' expeditions during hot days for exploring the Alps and Pyrenees. Railway companies are to issue special tickets at exceedingly moderate rates.

THE Prefect of the Seine Department has created a fund of 11,000 francs for sending to Dieppe, the seaport nearest to Paris, a number of pupils of the municipal free schools. Fifty will be selected from each school, and are to be chosen according to their merits. These tourist-laureates are to be boarded in the Dieppe College, visit surrounding places, and receive instruction in the natural curiosities or historical facts connected with the localities.

WE observe from the *Bulletin Mensuel* of the Observatory of Montsouris for May that the Administration of Paris on April 11 last decided that meteorological observations be made with special reference to health in different parts of the city, and voted an annual grant of 12,000 francs to the Observatory, to which the inquiry has been entrusted. It has been resolved that the work shall embrace, in addition to the meteorological observations usually made, atmospheric electricity, and variations in the composition of the air (see ante, p. 156). In the meantime observations and experiments are being conducted at Montsouris with the view of arriving at simple practical methods of observing with scientific precision the different variable elements contained in the air, before extending the observations to the different quarters of the city. This number of the *Bulletin* details some very interesting results of elaborate observations made on the ozone, carbonic acid, and organic matters of the air of Paris, illustrated with figures of some of the more interesting organisms.

THE interesting address by the senior vice-president, Mr. J. Thackray Bunce, at the last annual meeting of the members of the Birmingham Midland Institute, has been printed in a separate form. Mr. Bunce contrasts the condition of Birmingham with regard to education twenty-three years ago, when the Institute was founded, with its condition now. The contrast is very great

indeed, and the Institute has no doubt done much to dispel the darkness in the midst of which it started. Mr. Bunce sketches the progress of the Institute, which is now in a most flourishing condition, and rightly urges the members to renewed efforts to make it increasingly useful.

THE following additions have been made to the Royal Aquarium, Westminster, during the past week:—Picked Dogfish (*Acanthias vulgaris*); Bass (*Labrax lupus*); Streaked Gurnards (*Trigla lineata*); Sapphirine Gurnards (*Trigla hirundo*); Turbot (*Rhombus maximus*); Greater Pipefish (*Syngnathus acus*); Cornish Suckers (*Lepidogaster cornubiensis*); White Bream (*Abramis blicca*); Pope or Ruff (*Acerina vulgaris*); Zoophytes (*Alcyonium digitatum*).

THE additions to the Zoological Society's Gardens during the past week include a Great-headed Maleo (*Megacephalon maleo*), from Celebes; a Bornean Fireback Pheasant (*Euplocamus nobilis*); two Common Crowned Pigeons (*Goura coronata*), from New Guinea; two Black-backed Geese (*Sarcidiornis melanota*), from India (?); a Saddle-billed Stork (*Xenorhynchus senegalensis*), from West Africa, purchased.

SOCIETIES AND ACADEMIES

LONDON

Anthropological Institute, June 13.—Col. A. Lane Fox, F.R.S., president, in the chair.—Prof. Busk, F.R.S., described a collection of crania of natives of the New Hebrides, some of which had been sent to the president by Mrs. Goodenough, and others to the Royal College of Surgeons, by Dr. Corrie, R.N. Seven were from the Island of Mallicollo and three from that of Vanikoro. With respect to the former, he remarked that they were of special interest as being the first, so far as he was aware, that had ever been brought to Europe from that locality, and also from their extraordinary form, due to the artificial depression of the forehead, a mode of deformation not hitherto recorded among the Melanesian race of New Guinea and the South Sea. The peculiar form of the head among the Mallicollese was noticed by Captain Cook and the two Forsters on the occasion of the discovery of the Island in 1774. The skulls from Vanikoro, on the other hand, represented the normal form of the cranium in people of the same race.—A paper by Mr. Ranken on the South Sea Islanders, was read by Mr. Brabrook. The author proposed that the name Mahori should be adopted to distinguish the light races of the Pacific from the Papuans or blacks. He adduced evidence to show that the latter first occupied a considerable number of the islands, and that the lighter race arrived subsequently from the west and formed a settlement in Samoa, whence it is now well established, that they spread in all directions, and, in some instances, mingled with the Papuans. He mentioned several points in which the Mahoris differ essentially from the Malays, who, however, appear to be a cognate race.—A short account of a visit paid to New Guinea, by M. d'Albertis, was communicated by Mr. Franks.—Mr. Distant described some photographs of natives of the Nicobar Islands.

Geologists' Association, June 2.—Mr. Wm. Carruthers, F.R.S., in the chair.—Notes on the geology of Lewisham, by Mr. H. J. Johnston Travis, F.G.S. The author, after briefly alluding to that portion of the Upper Chalk which is exhibited in the excavations, proceeded to describe the Thanet Sands, and to compare this section with the neighbouring one at Charlton, where, in the Thanet Sands, casts of *Cyprina* and the vertebra of fish have recently been discovered. Referring to the well-known green-coated flints about which there has been so much controversy, he mentioned a circumstance which may be noted at the fault near St. John's Station, Lewisham. The Chalk and Thanet Sands are there faulted against each other at an angle of 40°, but the actual line of contact is now occupied by a band of flint. This shows that the chalk has been dissolved away by acidulous waters, following the fissure down to this band of flint, which has resisted further action. Portions of the same flint, where yet imbedded in the chalk, retain the usual white surface, whilst those portions projecting into the sands are green-coated. The author then instituted a close comparison between the Woolwich and Reading beds of the Lewisham and Charlton sections respectively.